

Electric Utility Industry Restructuring: Issues for Rural America

Congress is considering several proposals to restructure the electric utility industry that could lower the costs of generating electricity as new less costly and more efficient capacity is added to the generation mix, reducing the average cost of producing electricity. Until now, most of the restructuring has been at the State level as States have moved forward with restructuring legislation. Moreover, States will continue to play a vital role because most regulation of the industry is at State and local levels. Restructuring also would reduce regional differences in electric rates by stimulating creation of larger regional markets for electricity. Rural households, farms, and businesses are concerned about a number of issues, including universal access, regional differences in energy costs, stranded investments, and taxation, that will determine how they fare under restructuring.

Restructuring the U.S. electric utility industry is expected to bring about a general decline in electricity rates for retail consumers as competitive markets pressure power suppliers to reduce their costs. Competitive markets also could result in service options specially tailored to the needs of particular customers. But, the overall picture may mask potential differences across geographic regions, economic sectors, electric utilities, businesses, and consumers. As has been the case in other industries, restructuring is expected to benefit U.S. economic performance as a whole, but there will be both winners and losers.

After restructuring, retail consumers will be able to buy the lowest cost electricity available from wholesale marketers (either electric power generating companies or power marketing companies). The power would then be delivered to consumers over the wires of their electric distribution company. Prices are expected to fall in some regions due to competition among marketers because electricity will be bid away from low-cost regions and because the marginal costs of producing power are below the average embedded costs in most regions. Although electric rates could rise in regions that currently enjoy the lowest electric rates, rates for most consumers are expected to fall.

State Actions Have Been the Focus of Restructuring Efforts

The wholesale market for electric power was restructured by the Federal Energy Policy Act of 1992 (EPACT), which authorized the Federal Energy Regulatory Commission (FERC) to implement a competitive market in wholesale electric power among utilities. As a result of EPACT, wholesale customers can now purchase electricity on spot or futures markets, but retail distribution and sales remain under the jurisdiction of State public utility commissions.

Congress is considering legislation that would further restructure electric utilities. A comprehensive approach typically addresses three separate components: (1) provisions for retail competition with consumer choice of electric power provider (but the retail distribution of power remains regulated), (2) reform of section 210 of the 1978 Public Utilities Regulatory Policy Act (PURPA) that now provides co-generators and small power producers a guaranteed market for their power, and (3) reform of the Public Utilities Holding Company Act (PUHCA) regulating financial transactions of large holding companies that hold ownership in public utility companies.

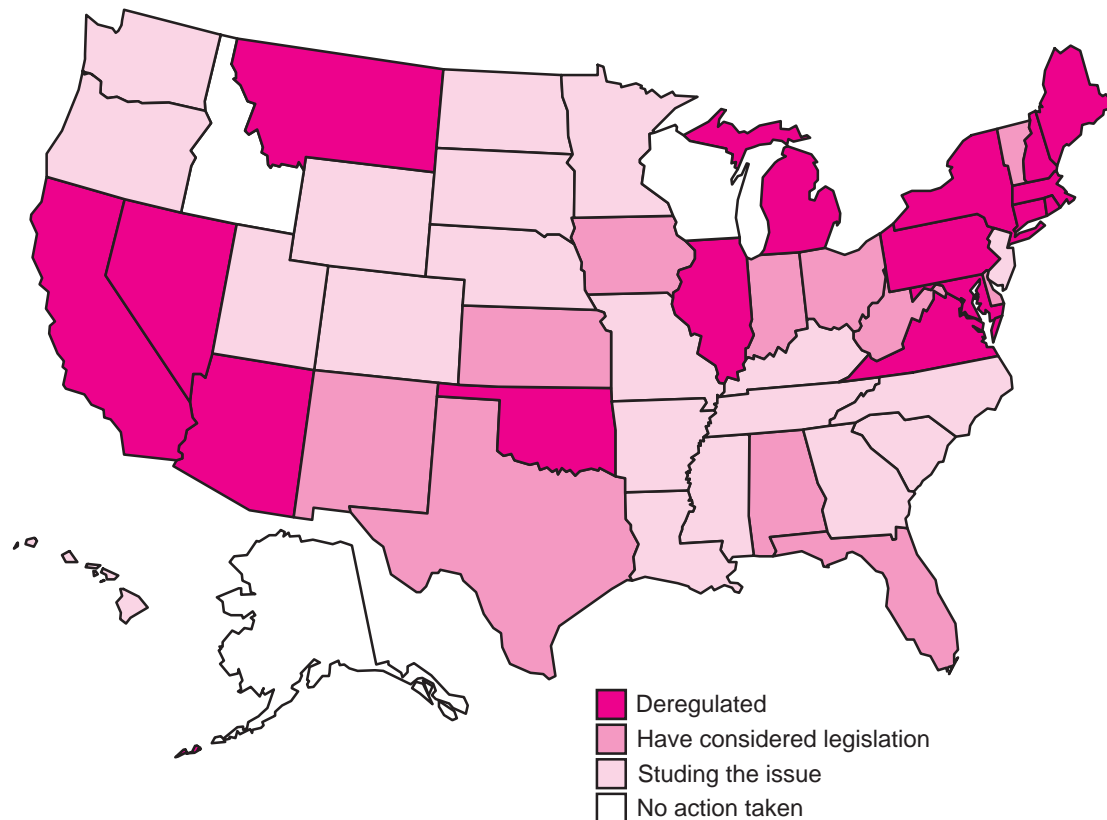
Congress has considered several comprehensive legislative proposals that set deadlines for the beginning of retail competition ranging from January 1, 1999, to December 15, 2003. The Clinton Administration has proposed legislation as well, but Congress did not act on any of these bills in its 1997-98 sessions. Similar legislation may be introduced in the 106th Congress, although the timing of Federal legislation, if it occurs, cannot be predicted.

Thus far, State actions, both legislative and regulatory, have been the focus of restructuring efforts. To date, 12 States have passed restructuring legislation, and 4 have implemented restructuring on the basis of public service commission regulatory action. Another 12 States are considering legislation or reconsidering bills that failed to pass previously. Nineteen States are studying restructuring, either by the legislature or by the public service commission. Only three States have taken no action at this time (fig. 1).

Legislation enacted differs from State to State. If the dimensions of prospective Federal restructuring legislation become clearly defined, State legislative efforts will focus on addressing State responsibilities outlined in that Federal legislation. But in the meantime, several States are aggressively developing regulatory frameworks for retail restructuring. Other States have chosen to take a more measured approach, hoping to learn from the experiences of States that took actions early.

Status of State action on electric utility deregulation, 1998

Northeastern and Southwestern States have been the first to deregulate



Source: *Energy*, Wall Street Journal Reports, *Wall Street Journal*, September 14, 1998; U.S. Department of Energy, Energy Information Administration.

Electric rates vary from State to State due to differences in the availability of energy sources, cost and efficiency of generating facilities, and taxation (fig. 2). However, differences in distribution costs are also important determinants of electric rates across States. Within a particular State, rural customers typically pay more for electricity than do urban customers, but many of the low-cost States are largely rural. States that currently have low-cost electricity are concerned that restructuring may deprive them of an important selling point in attracting business. After restructuring, businesses will be able to simply buy low-cost electricity from broader regional markets and have it delivered to them by their distribution company. Restructuring will build upon competitive pricing for wholesale power and provide consumers with a choice in accessing wholesale power, but it will continue regulated pricing for high voltage transmission and retail distribution of electricity.

Rural Electric Cooperatives Play an Important Role in Providing Rural Service

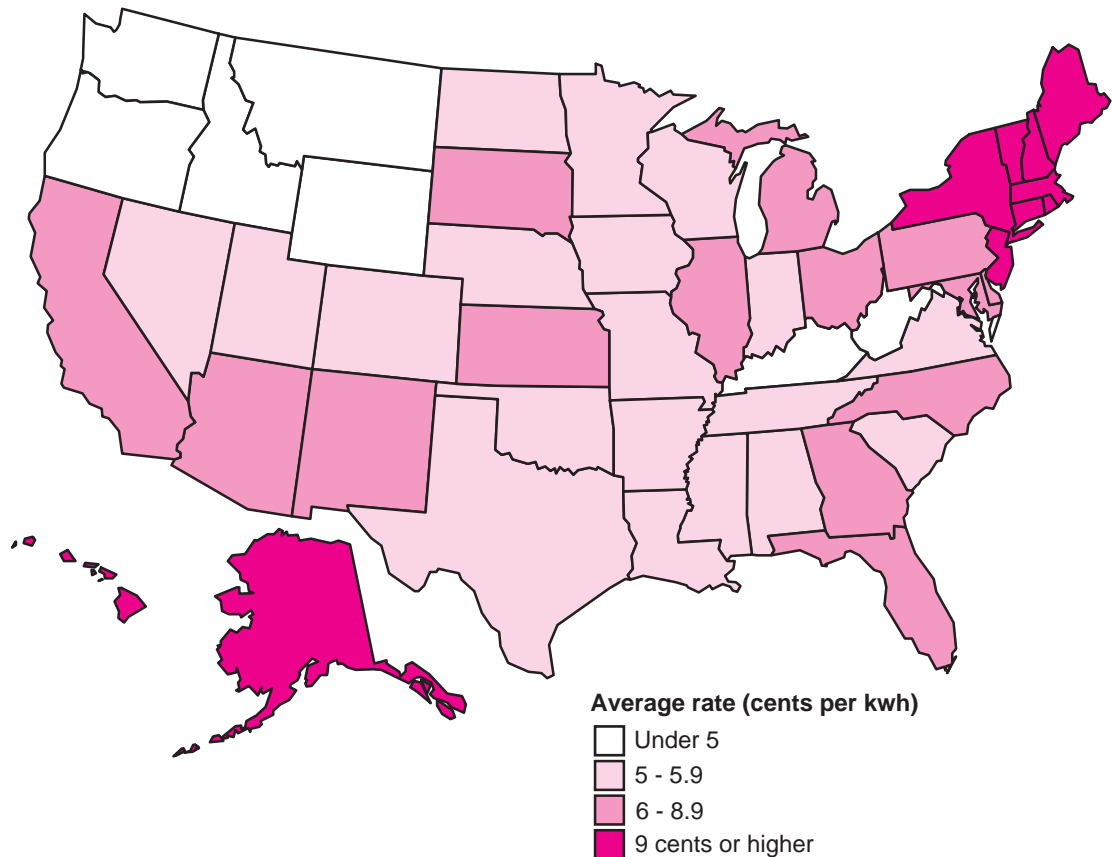
Electric service arrived relatively late in rural areas, aided by the 1936 Rural Electrification Act (REA), which provided low-cost loans to provide wiring and to help rural homes and farms acquire electrical and plumbing appliances and equipment. Before the REA, electric utilities had largely concluded that extending service to rural households was not cost effective. At the time, no one foresaw how dramatically access to electricity would change rural lifestyles.

As a means of extending electric service into rural areas, rural electric cooperatives (REC's) were formed in most States to build and operate cooperatively owned electric utilities focused

Figure 2

Estimated average electric utility revenue per kilowatthour, by State, 1998

Electric rates are highest in the Northeast, lowest in the Northwest



Source: U.S. Department of Energy, Energy Information Administration.

on serving rural areas. These cooperatives, still relied upon in many rural areas today, have been instrumental in electrifying rural America and in supporting a revolution in rural living. Rural households use electricity for the same purposes that urban households do—heating, cooling, cooking, lighting. They also use electricity in operation of the farm business—pumping water, milking cows, powering irrigation systems, cooling and heating livestock facilities, and preparing livestock feedstuffs. Electricity costs, as a proportion of the direct cost of farm production in commercial farms, range from less than 2 percent on 476,000 farms, 2 to 4 percent on 385,000 farms, 4 to 6 percent on 121,000 farms, 6 to 10 percent on 77,000 farms, to more than 10 percent on 43,000 farms, depending on the type of agriculture involved (from USDA Agricultural Resource Management Survey data). Electricity accounts for a large share of costs in many types of manufacturing, including textiles, apparel, chemicals, stone, clay, and metal-working industries, which are important rural employers (table 1).

REC's are important providers of electric services to rural customers, but they account for only about 7 percent of U.S. electricity sales nationally. Most of them are "wire" companies. They market and distribute power purchased primarily from generating and transmission cooperatives, which they own, and from Federal power providers, such as the Tennessee Valley Authority and the five Federal Power Marketing Administrations (PMA's). Distribution cooperatives purchase up to 40 percent of their power requirements in the wholesale spot market and about 60 percent under long-term contracts with wholesale suppliers. REC's that borrow from USDA's Rural Utility Service generate overall about 64 percent of the electric power they sell to consumers (U.S. Dept. Agr., Rural Utility Serv., 1997 *Statistical*

Table 1

Manufacturing industries for which electricity accounts for 10 percent or more of materials costs, 1992*Electricity is an important cost component for many textile, apparel, chemical, and metal-working industries*

| Industry | Electricity's share of materials costs | Number of establishments |
|--------------------------------------|--|-----------------------------|
| | Percent | Number |
| Industrial gases | 66.4 | 592 |
| Yarn throwing mills | 33.3 | 33 |
| Alkalies and chlorine | 30.8 | 51 |
| Primary aluminum | 30.3 | 41 |
| Cement, hydraulic | 22.7 | 218 |
| Women's dresses | 22.0 | 2,527 |
| Shirts, men's and boys' | 21.9 | 244 |
| Girls' outerwear | 20.7 | 155 |
| Men's and boys' suits | 18.8 | 93 |
| Malleable iron foundries | 18.3 | 24 |
| Women's outerwear | 17.9 | 1,816 |
| Weaving and finishing, wool | 14.1 | 27 |
| Electrometal products | 13.6 | 37 |
| Men's and boys' trousers | 13.5 | 173 |
| Women's suits, coats | 13.4 | 602 |
| Industrial inorganic chemicals | 13.2 | 697 |
| Women's and children's undergarments | 13.1 | 140 |
| Robes and dressing gowns | 13.0 | 36 |
| Lime | 12.8 | 88 |
| Brick and structural clay tile | 12.7 | 220 |
| Women's blouses | 12.7 | 951 |
| Manufactured ice | 12.5 | 562 |
| Girls' dresses | 12.0 | 189 |
| Ordnance and accessories | 11.8 | 72 |
| Textile finishing plants | 11.4 | 41 |
| Paperboard mills | 11.4 | 144 |
| Mineral wool | 11.4 | 225 |
| Men's and boys' clothing | 11.3 | 279 |
| Steel foundries | 10.7 | 288 |
| Lace and wrap knit fabrics | 10.5 | 98 |
| Pressed and blown glass | 10.2 | 450 |
| Blast furnaces and steel mills | 10.2 | 79 |
| Glass containers | 10.0 | 76 |
| Gray iron foundries | 10.0 | 713 |
| All manufacturing | 2.4 | 11,981 |

Source: Calculated by ERS from 1992 Census of Manufactures.

Report, Rural Electric Borrowers, Tables 3 and 5, Inf. Pub. 201-1, Sept. 1998). Because REC generating and transmission cooperatives are owned by REC distribution cooperatives, they could, arguably, provide some price protection to distribution cooperative members in the event electricity prices were to rise in the wholesale market above REC generation costs. Additionally, unless the PMA's change their pricing and power access arrangements, REC's, municipal utilities, and certain other institutions have preferential access to PMA power at prices that may be below competitive wholesale market prices. The level of price protection, however, may prove to be limited because a substantial

amount of electricity sold by REC distribution coops must be purchased outside of the REC system, REC generation cooperatives currently are focused on increasing their level of capitalization, and these coop customers may insist on having access to consumer choice for purchase of wholesale electric power.

Consumer Response to Price Changes Difficult To Predict

Consumers probably will be offered more innovative pricing schedules after restructuring. Rates may vary more, depending on the time of day electricity is used and whether a customer requires a guaranteed or interruptible power supply. This time-of-use pricing sets prices nearer to actual marginal costs, and encourages customers to shift usage to off-peak hours. (Time-of-day pricing can also be used under regulated pricing.) Electric power may be marketed to consumers as part of a package of services that includes telephone, cable TV, Internet, and home security protection. Time-of-use pricing, marketing, and packaging of services make predicting how consumers will respond to price changes more difficult, but customers will probably be more price responsive under competitive pricing.

Consumers are likely to adjust their energy use in response to changes in electricity rates resulting from restructuring. For example, lower electric rates would encourage more rural households to heat and cook with electricity rather than oil or propane. If restructuring pushes up rural rates, power for crop irrigation could shift from electricity to fuel oil or natural gas. Natural gas, however, is more widely available to urban than to rural households and businesses. (Urban households are more likely than rural households to heat with gas, while rural households are more likely to use oil, wood, or coal.) The availability of substitutes means that the response to a given change in electricity rates may be proportionately greater in urban than in rural areas.

Restructuring would create larger regional markets for wholesale power and would tend to equalize prices between regions. Wholesale power costs in high-cost regions could decline as consumers in these regions bid electric power away from low-cost regions. Electric rates in low-cost regions could then rise. In the longer term, the addition of lower cost power generation will be the primary factor bringing down wholesale electric prices. Highly urbanized high-cost regions (the Northeast and California) stand to benefit most from electricity restructuring, while the more rural low-cost regions (the Pacific Northwest, Northern Plains, Midwest, and Mid-South) will gain less and could have higher electric rates. The investment necessary to produce and deliver a given amount of electricity to consumers, along with the efficiency of the system used, largely determines the cost of electricity to consumers. The level of State and local government taxes added to electric utility rates is also a factor. Consumers in New York State, for example, have higher electric rates, partly because of high taxes on electric utilities—which are passed on to consumers in those higher rates.

Within regions, some customers will exercise greater market power than others. A large consumer, such as a manufacturing plant, is more likely to negotiate lower rates on electric power than is a smaller consumer, such as a residential customer or farmer. Many large industrial users have already negotiated preferred rates under the regulated environment.

Recovery of Stranded Costs Is an Important Issue

Under regulation, electric rates are set by regulatory authorities so that past capital investments made by electric utilities can be recovered. In a competitive restructured market, utilities will no longer be able to set rates that can assure recovery of all these “stranded costs,” estimated to be anywhere from \$50 to \$250 billion. The Federal position is that stranded costs be recovered. How stranded costs will be recovered is one of the more difficult issues to resolve regarding electricity restructuring.

Until Federal policy on electric utility deregulation is passed, State regulators will exercise the dominant role in defining stranded costs and how they can be recovered by electric utilities. Some State regulators will probably not permit the firms to recapture all their stranded costs. The importance of stranded costs differs across electric utilities and

regions of the country. Those with more hydro-power tend to have fewer stranded costs, while those with more nuclear power production tend to have more, although not always. Other factors also enter into stranded costs, such as high-cost purchase power contracts and deferred regulatory assets. Complicating the dilemma for regulators is that some utilities may have “stranded benefits”—where utilities are able to recover more than their full costs in a competitive market place.

Recently, the concept of securitizing stranded costs has emerged. In securitization, utilities sell debt instruments (such as bonds) to the public, and repayment is backed by the utilities’ earnings stream and by legislative or regulatory assurance that electric rates can be raised sufficiently to assure that the bonds’ principal and interest will be repaid on time. An additional monthly charge is added to retail electric bills to repay the utilities’ securitized debt.

Delaying restructuring for several years is another strategy for dealing with stranded costs. Allowing utilities to amortize their investments under the old regulated pricing system reduces the magnitude of stranded costs each year restructuring is delayed. Delays arguably deny retail consumers earlier access to electric power rate reductions and do not relieve them of the burden of paying for what otherwise would be called stranded costs.

How Can Rural Access to Electricity Be Assured?

Many observers worry about consumer access to electric power in a restructured marketplace. For example, would electric power distribution firms be willing to extend new power connections to individual consumers or groups of consumers remote from established power lines? Would consumers be required to pay part, or all, of the cost of the connection, as was often true with investor-owned utilities in rural settings prior to rural electric cooperatives coming into existence. Will all consumers have reasonably priced access to lifeline supplies of electric power? In a well thought out restructuring of electric utilities, these concerns should be no more worrisome than was true prior to restructuring. Distribution systems will remain under regulation. Most customers currently pay the costs of lifeline rate and universal service provisions in their current electric rates. The primary issue will be how these services will be paid for in a restructured industry.

Some public policymakers envision the need for universal service guidelines to assure access and equity under deregulation. They are concerned that distribution firms will invest their capital only where the return is the greatest (presumably in urban or suburban settings), to the neglect of rural areas and poor communities. One approach to ensuring access is to charge all consumers a monthly fee to fund provision of a limited quantity of electric services (lifeline services) to those who would otherwise be unable to afford it. Something like this is done to assure access to telephone service in rural areas.

Issues such as lifeline electric supplies for consumers, and the rules under which groups such as residents of a municipality or dairy farmers who are members of a dairy processing cooperative bid for electric power, probably will be defined somewhat differently across the various States legislating retail electric utility restructuring. National policymakers may decide to provide guidelines in Federal law that assure certain principles for market based retail competition in electric power, such as market regulation, service reliability, universal access, and lifeline electric energy supplies.

Deregulation May Shift Taxes Currently Built into Electric Rates

Taxation of electric utilities under restructuring will present a challenge to State and local government taxing authorities. Electric utilities have been attractive targets for taxes at these levels of government because of their large fixed investments in many communities. State and local taxes are built into electricity rates set by regulatory authorities. For example, the high level of taxes embedded in New York electric utility rates is one reason that the State’s electric rates are higher, at 11.1 cents per kilowatt hour, than the U.S. average rate of 6.9 cents per kilowatt hour.

Under a regulated market, most of these taxes were embedded in electric power charges and passed on to the consumer. Under the restructuring of electric power utilities, they

may be less effective as vehicles for taxation. For example, electric power generation firms and power brokers might sell power in a government jurisdiction, while their taxable physical assets are located elsewhere, beyond the reach of tax authorities in the State or locality where their power is sold.

If State and local tax revenues from the electric power industry are to be sustained under restructuring, different tax strategies may be needed. Tax strategies currently in place may result in lower tax revenues in some situations. *[Marvin Duncan, 202-401-0533, mduncan@oce.usda.gov]*